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An Addition to the *Ishikawatrechus* Fauna (Coleoptera, Trechinae) of the Ishizuchi Mountains, Southwest Japan

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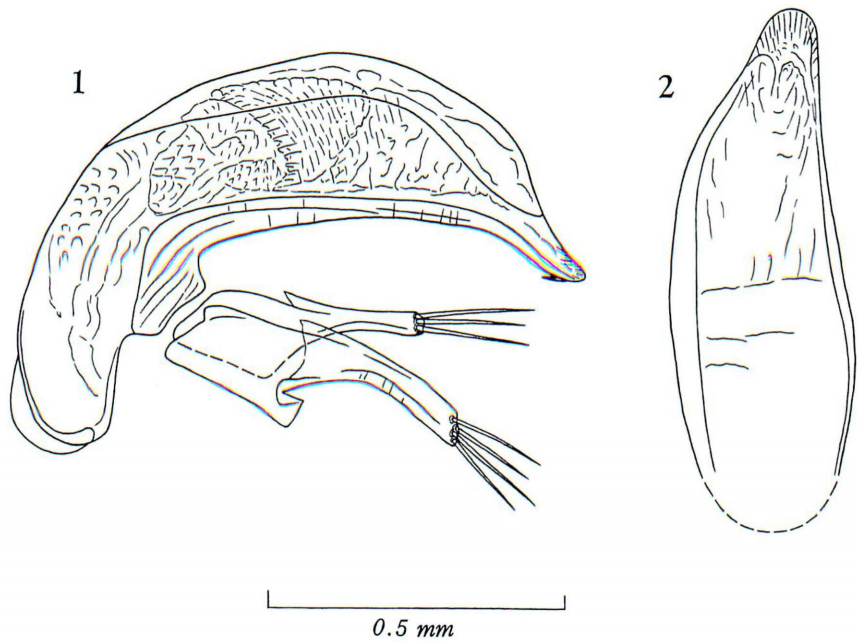
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Abstract A new upper hypogean species of blind trechine beetle belonging to the *robustior* group of the genus *Ishikawatrechus* is described from near the northern foot of the Hôsei Mountains, a northeastward branch ridge of the Ishizuchi Mountain Range in northern Shikoku, Southwest Japan. It is closely related to *I. aquilonius* S. UÉNO, but is readily discriminated from it by the difference in striation of the elytra and in conformation of the male genitalia, above all in the presence of an acute ventral hook at the aedeagal apex. The new name given is *Ishikawatrechus doiensis* S. UÉNO et NAITÔ.

The blind trechine beetles of the genus *Ishikawatrechus* occurring on the Ishizuchi Mountains of northern Shikoku were recently enumerated by the first author on the basis of material from more than thirty localities and were classified into fourteen species and one subspecies (UÉNO, 2008). In the course of proof-reading of this paper, another species of the same genus was discovered by the second author at the northern foot of the Hôsei Mountains, a northeastward branch ridge of the Ishizuchi Mountain Range, and was determined as a new species of the *robustior* group. Unfortunately, the discovery was made a little too late to be included in the first author's paper cited above, so that the new species is described in the present paper as an important addition to the *Ishikawatrechus* fauna of the Ishizuchi Mountains.

This new species is a close relative of *I. aquilonius* S. UÉNO (2008, p. 26, figs. 9–10), but the aedeagal apex is provided with a small but acute ventral hook. Its occurrence indisputably shows that the absence of the ventral hook in *I. aquilonius* is an exceptional state, and that even the character state of generic importance is sometimes subject to specific variation. The genitalic gap between *I. robustior* S. UÉNO (1997, p. 10, figs. 6–7) and *I. aquilonius* is sufficiently bridged by the discovery of the present species.



Figs. 1–2. Male genitalia of *Ishikawatrechus doiensis* S. UÉNO et NAITÔ, sp. nov., from Urayama of Doi-chô; left lateral view (1), and apical part of aedeagus, dorso-apical view (2).

Ishikawatrechus doiensis S. UÉNO et NAITÔ, sp. nov.

(Figs. 1–2)

Length: 4.50–5.00 mm (from apical margin of clypeus to apices of elytra).

Belonging to the *robustior* group and closely allied to *I. aquilonius*, but distinguished at first sight from it by sparsely pubescent genae, obviously shallower elytral striation, and the presence of ventral hook at the aedeagal apex.

Colour a little lighter than in *I. aquilonius*, with somewhat more reddish elytra. Head somewhat broader than in *I. aquilonius* due to a little more convex genae sparsely bearing short hairs; antennae slightly longer, reaching basal five-eighths of elytra. Pronotum somewhat longer on an average than in *I. aquilonius*, widest at four-fifths from base; PW/HW 1.36–1.43 (M 1.39), PW/PL 0.89–0.97 (M 0.92), PW/PA 1.34–1.43 (M 1.39), PW/PB 1.39–1.44 (M 1.42), PB/PA 0.94–1.00 (M 0.96) [PA/PB 1.00–1.07 (M 1.04)]; sides moderately arcuate from front angles, gradually convergent posteriad, slightly but widely sinuate near basal fifth, and then slightly divergent towards sharp hind angles.

Elytra ovate, widest at about middle, with shoulders a little more distinct and prehumeral borders a little more deeply emarginate than in *I. aquilonius*; EW/PW 1.73–1.75 (M 1.74), EL/PL 2.42–2.51 (M 2.46), EL/EW 1.49–1.57 (M 1.54); dorsal convexity as in *I. aquilonius*; striae obviously shallower than in *I. aquilonius*, particularly at the external part, striae 6–7 partially evanescent; chaetotaxy as in the other species of

the species-group, stria 3 with two setiferous dorsal pores at about 1/7 and 3/10–3/7 from base, respectively, stria 5 with a single setiferous dorsal pore at about 3/5 from base. Legs as in *I. aquilonius*.

Male genital organ more closely similar to that of *I. aquilonius* than to that of *I. robustior*, heavily sclerotised though small. Aedeagus one-third as long as elytra, robust, broader than high, asymmetrical with the left wall reduced and evidently lower than the right, dorsal margin of right wall semicircularly arcuate in profile except for apical part; dorsum widely membraneous; basal part gently curved ventrad, with basal orifice deeply emarginate at the sides; sagittal aileron narrow; apical lobe a little longer than in *I. aquilonius*, with a small but acute ventral hook at the apex; viewed dorsally, apical part gradually narrowed towards apical lobe whose tip is widely rounded; viewed laterally, apical part abruptly narrowed at the basal part of apical lobe, which is narrow, slightly reflexed, and rather pointed at the extremity; ventral margin widely but slightly arcuate at middle in profile. Inner sac largely covered with poorly sclerotised scales and teeth, which are fairly compact at middle. Styles slender, left style longer and larger than the right, each bearing three or four setae at the apex.

Type series. Holotype: ♂, allotype: ♀ (found dead), paratypes: 1 ♂, 1 ♀ (found dead), 3–IV–2008, T. NAITÔ leg. All deposited in the collection of the Department of Zoology, National Museum of Nature and Science, Tokyo.

Type locality. Urayama, 200 m in altitude, in Doi-chô of Shikoku-chûô-shi, at the northeastern part of Ehimé Prefecture, northern Shikoku, Southwest Japan.

Notes. This new species was found in the upper hypogean zone deposited on the right side of the Urayama-gawa River at the northwestern foot of Akaboshi-yama (1,453 m in height), one of the heads at the central part of the Hôsei Branch of the Ishizuchi Mountains. Its habitat is a thick layer of schist gravel wholly covered with dark soil, and all the four specimens known were dug out from a depth of about 80 cm. Two females found dead are in a fairly good condition, though both are heavily infected with fungi of Laboulbeniales.

Geographically, the type locality of *I. doiensis* is only 7.1 km distant to the northwest in a beeline from that of *I. aquilonius* and is about 5 km removed from the seashore; the former lies at the northwestern foot of Akaboshi-yama, while the latter lies at the southeastern foot of the same mountain. Besides, the former locality is only 10.7 km distant to the west by north in a beeline from a prospecting adit at Nagano, the type locality of *I. robustior*, which lies at the southern foot of the northeastern part of the Hôsei Branch continuing from Akaboshi-yama. This means that the differentiation of the three species of *Ishikawatrechus* must have taken place within a narrow hilly area stretching between the Dôzan-gawa Valley and the Inland Sea of Setonaikai. How such an almost sympatric speciation could have occurred on the Hôseis is a subject open for future investigations, but it can be regarded at least as a typical sample showing the remarkable species diversity of blind trechines on the Ishizuchi Mountains.

Incidentally, *I. orientalis* S. UÉNO (2008, p. 23, figs. 6–8), a fourth member of the *robustior* group, is different from the other three species by the almost symmetrical

aedeagus and is isolated to near the eastern end of the main range of the Ishizuchi Mountains.

要　約

上野俊一・内藤隆夫: 石鎚山地のツヤメクラチビゴミムシ相に追加される1新種. —— 石鎚山脈の支脈を形成する法星山地の赤星山北西麓から，地下浅層性メクラチビゴミムシの1新種を記載し，ドイメクラチビゴミムシ *Ishikawatrechus doiensis* S. UÉNO et NAITÔ という新名を与えた．この種は，ツヤメクラチビゴミムシ属のキンシャメクラチビゴミムシ種群に属し，アカボシメクラチビゴミムシ *I. aquilonius* S. UÉNO に類縁が近いが，属徴である雄交尾器中央片先端部腹面の鉤状突起が，既知の2種の場合の中間の状態を示す点でいちじるしく，分類形質を評価するうえでも，系統を解析するうえでも，貴重な存在だと考えられる．

References

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